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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/679,712	10/06/2003	Shoupu Chen	86575SHS	2888

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EXAMINER

PATEL, JAYESH A

ART UNIT	PAPER NUMBER
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2635

DATE MAILED: 11/07/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/679,712

Applicant(s)

CHEN ET AL.

Examiner

Jayesh A. Patel

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01/26/2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5 and 9 is/are rejected.
- 7) ☒ Claim(s) 6-8 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 July 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
- Paper No(s)/Mail Date 07/24/04
- 4) ☐ Interview Summary (PTO-413)
- Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1,3,4,5 are rejected under 35 U.S.C. 102(b) as being anticipated by Meron et al. US 6950690 (hereafter Meron).

1. Regarding Claim 1, Meron discloses A digital image processing method for aligning in vivo images from multiple passes of a gastrointestinal tract to aid in diagnosing gastrointestinal disease, comprising the steps of: **a)** conducting multiple passes of in vivo imaging within the gastrointestinal tract in (Col 3, Lines 9-16). **b)** Forming a registration bundle of metadata for each of the multiple passes. "Generating a map"(Col 3, Lines 10-13). Registration is necessary in order to be able to compare and map images. A Metadata describes the content of the Images and helps in Image file management. Therefore forming a registration bundle of metadata will generate a map of images, it's location and other metadata attached with the images. Meron also discloses element **c)** selecting possible indexed features of an in vivo image from the registration bundle associated with one pass (Col 6, Lines 61-63) and **d)** retrieving corresponding images

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from another pass based on prior selection of the possible indexed features (Col 6, Lines 64-67 and lines 52-57).

2. Regarding Claim 3, Meron discloses a digital image processing method claimed in claim 1, wherein selection of the possible indexed features includes the step of selecting an in vivo image using a global index in (Col 6, Lines 61-63), where identifying the location of pathology with sensor means input on Gastrointestinal tract map refers to the global index.
3. Regarding claim 4, Meron discloses a digital image processing method claimed in claim 1, wherein selection of the possible indexed features includes the step of selecting an in vivo image by browsing a plurality of images at (Col 6, lines 54-57).
4. Regarding Claim 5, Meron discloses a digital image processing method claimed in claim 1, wherein selection of the possible indexed features includes the step of selecting an in vivo image using an anatomical identity and a local index in (Col 6, Lines 61-63).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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Claims 2 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Meron et al. US 6950690 (hereafter Meron) and Caspi US 6909794 (hereafter Caspi).

5. Regarding Claim 2, Meron discloses the digital image processing method to meet the limitations of claim 1. Meron further discloses the limitations **b1)** retrieving an anatomical identity label associated with the Gastrointestinal tract. **b2)** retrieving a global index label corresponding to each in-vivo imaging pass. **b3)** retrieving a local index label with respect to a specific anatomical section within the Gastrointestinal tract. **b4)** Calculating global travel distance within the Gastrointestinal tract. (Col 3, Lines 44-48, Col 2, Lines 12-15 and Col 2 Lines 30-32).

Meron does not disclose, **b5)** Forming at least one registration bundle from information in steps b1-b4 and **b6)** Forming a registration bundle from the at least one registration bundle, wherein the at least one registration bundle includes at least a combination of the anatomical identity label, the global index label, the local index label and the global travel distance.

Caspi discloses **b5)** Forming at least one registration bundle from information in steps b1-b4 and **b6)** Forming a registration bundle from the at least one registration bundle, wherein the at least one registration bundle includes at least a combination of the anatomical identity label, the global index label, the local index label and the global travel distance (Col 5, Lines 44-67 and also Col 6 Lines 3-7, 28-38).

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Both Meron and Caspi are from the same field of endeavor and are analogous art. Therefore it would have been obvious for a person, skilled in the art at the time the invention was made, to have combined the teachings of Meron and Caspi to construct a method for delivering a device to the target location (Meron) and use the automated Registration algorithms (Caspi) for finding the correct location of the pathology in the Gastrointestinal tract. Registration is a necessary step in the medical imaging. The task becomes more tedious and leads to erroneous results, if the images are aligned and compared manually. Therefore the method of automatic registration as taught by Caspi is, faster and accurate.

6. Regarding Claim 9, Meron discloses elements,

b) A template source for detecting in vivo images that indicates a diseased gastrointestinal tract and sending the in vivo images to the image alignment processor in (Col 3 Lines 32-39).

c) A display for displaying a plurality of aligned in vivo images (Col 6 lines 29-34).

d) A means for transmitting the plurality of in vivo images at (Col 6 lines 19-24).

e) A means for storing metadata associated with the plurality of in vivo images (Col 6, Lines 24-29).

f) A means for communicating selected in vivo images across a network (Col 6, Lines 24-29).

g) A means for outputting the plurality of aligned in vivo images at (Col 6, Lines 39-44).

h) A user interactive means for inputting and/or controlling the metadata and/or the plurality of in vivo images at (Col 6, Lines 61-63).

a) Meron also discloses, selecting and retrieving possible indexed features of a plurality of in vivo images from multiple image capturing passes.

However, Meron does not disclose, the possible indexed features enable one to correctly align the plurality of in vivo images from multiple image capturing passes according to images captured at substantially similar positions in a gastrointestinal tract.

Caspi discloses, automatic registration for medical scans of similar anatomical structures (Col 3, Lines 55-59).

Both the Meron and Caspi are from the same field of endeavor and are analogous art. Therefore it would have been obvious for a person, skilled in the art at the time the invention was made, to have used the capsule (60) for capturing images, Register and align the images to facilitate comparison and diagnosis of the disease.

Allowable Subject Matter

Claims 6-8 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

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7) Regarding Claim 6, Meron discloses the digital image processing method to meet the limitations of claim 3. Caspi discloses,

d1) retrieving anatomical identity based on global index (Col 5, Lines 47-50 and Lines 59-62).

d3) locating the images corresponding to the anatomical identity (Col 2 Lines 10 –14 and Lines 26-35).

d4) Locating a set of images in a neighborhood of computed local travel distance (Col 6, Lines 53-58).

Meron also discloses computing a location and hence the distance traveled by the capsule (Col 2 Lines 12-15 and Lines 31-35), however does not disclose the

d2) Computing a local travel distance using a global travel distance and the anatomical identity,

Hence the element **d2) is the allowable subject matter.**

8) Regarding Claim 7, Meron discloses the digital image processing method to meet the limitations of claim 4, and Caspi discloses the limitations d1, d2, d4 and d5 as explained in claim 6, However the limitation **d3)** is not disclosed and is

allowable subject matter.

9) Regarding Claim 8, Meron discloses the digital image processing method to meet the limitations of claim 5, and Caspi discloses the limitations d2, d3 as explained in claim 6, However the limitation **d1)** is not disclosed and **is allowable subject matter.**

Conclusion

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jayesh. A. Patel whose telephone number is 571-270-1227. The examiner can normally be reached Mon –Fri 7.00am-4.30 pm (5-4-9) schedule. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Marvin M. Lateef can be reached on 571-272-5026. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JP



**DANIEL SWERDLOW
PRIMARY EXAMINER**